Classroom Architect

Performance Task

Introduction

A classroom is an important space for students. Classrooms are where students spend most of their time while they are at school. There is a lot of planning and details that go into designing a classroom. An architect is someone who designs and makes a plan for a particular space. To design a classroom, it is important to work with an architect who will make sure that the new space is an ideal environment for learning.

Big Idea / Essential Questions

Big Idea

Engineering design is a creative process that anyone can do which may result in new inventions and innovations.

Essential Questions

How is the engineering process and problem solving used when creating new inventions and innovations?

G.R.A.S.P.

Goal

Your goal is to think of a new design for a classroom at your school.

Role

You are part of a team of classroom architects who design classrooms that students find interesting, unique as well as comfortable. You will need to think about how you like to learn in your classroom.

Audience

Your audience will be the students, the teachers, and the principal of your school. You will need to create several products that will help show them how your design will work best for the students.

Situation

A classroom is an important space for students. Classrooms are where students spend most of their time while they are at school. There is a lot of planning and details that go into designing a classroom. An architect is someone who designs and makes a plan for a particular space. To design a classroom, it is important to work with an architect who will make sure that the new space is an ideal environment for learning.

Products

1. Illustration

Draw a picture of your classroom at school. Make sure to include any details that you think makes your classroom a good space for learning.

- How would you describe your classroom?
- Does your classroom support learning and activities?
- What are some unique features of your classroom?

Illustration-Classroom Architect

Achievement Levels	1	2	3
Illustration (x1)	Illustration and title are unclear and are not connected to the concept.	Illustration and title are somewhat clear and demonstrate minimal connection to the concept.	Illustration and title are clear and demonstrate some connection to the concept.

2. Drawing

Make a drawing for a new classroom design. Be sure to include features such as furniture, tables, desks, reading chairs or any other unique item that you think should be included in the new classroom. What geometry shapes did you use for your design? Be sure to label the shapes you know.

Have you thought about what colors should be used in your new classroom design? It will be important for your audience to get a good idea of your design proposal through the picture they see. It will help them understand what it is going to look like when it is finished.

- What does your classroom look like?
- What do you like about your classroom?
- What objects or things does a classroom need?

Drawing-Classroom Architect

Achievement Levels	1	2	3
Content (x1)	Drawing shows limited connection to content of task.	Drawing shows some connections to content of task.	Drawing includes details that demonstrate connection to content of task.
Creativity (x1)	Drawing is not very neat or colorful.	Drawing is somewhat neat and colorful.	Drawing is neat and very colorful.

Achievement Levels	1	2	3
Engineering (x1)	Student does not show many original or innovative ideas for the classroom design.	Student shows some original or innovative ideas for classroom design.	Student shows innovative ideas for classroom design.
Shapes (x1)	Students correctly identifies very few geometric shapes in the drawing.	Students correctly identifies some geometric shapes in the drawing.	Students correctly identifies all geometric shapes in the drawing.

3. Desk Diagram

You need to make a diagram that includes space for 25 students. This diagram can be made on a large piece of paper or graph paper. You will need to start by drawing a basic shape, like a rectangle, as an outline for your classroom. Inside of that outline, you will need to draw 25 desks or learning spaces that could be used for each student. Before finishing your design, it is very important to make sure that there will be enough room for the each student. You may use rows, groupings or circles to design your plan. Make sure to write the number in each desk or spot. If you are using table groupings or circles, write an addition sentence to show how your arrangements add up to 25. Don't forget to leave enough extra room for class activities, teacher planning and/or classroom supplies!

- What is a diagram?
- What will your diagram include?
- What does your classroom look like on a diagram?
- What math strategies can you use to make sure your groupings add up to 25?

Desk Diagram-Classroom Architect

Achievement Levels	1	2	3
Content and Accuracy (x1)	Desk diagram does not include a clear representation of desks through the use of a symbol or shape.	Desk diagram includes minimal representation of desks through the use of a symbol or shape and does not include the required number of desks.	Desk diagram includes representation of desks through the use of a symbol or shape and includes almost all required desks.
Math (x1)	Student makes several errors when counting and labeling the desks in their diagram.	Student makes some errors when counting and labeling the desks in their diagram.	Student makes very few errors when counting and labeling the desks in their diagram.
Organization (x1)	Desk diagram is not neat or clearly organized.	Desk diagram is somewhat neat and clearly organized.	Desk diagram is neat and clearly organized.

4. Classroom Learning List

Together as a class, you are going to discuss some of the ways and activities that help you learn. You need to consider two important questions for your discussion. First, how do you like to learn in a classroom? For example, do you like to listen to a teacher, or a video, or do you like to look at a picture, or read a book?

Second, what are some things or items in your actual classroom space that help you learn? Such as a group table or a carpeted reading area?

Your answers to these questions are important to think about as you and your team begin the design of the new classroom. Your teacher will help you record your ideas in two categories.

- Why is learning important?

- What do you like about your classroom space?
- How does your classroom space help you learn?

Classroom Learning List-Classroom Architect

Achievement Levels	1	2	3
Participation (x1)	Student did not participate in class discussion.	Student attempted to participate in class discussion.	Student participated and and offered valuable input in class discussion.
Speaking and Listening (x1)	Student did not follow agreed-upon rules for discussion. Student did not listen to others and interrupted.	Student somewhat followed agreed-upon rules for discussion. Student attempted to listen to others and attempted to not interrupt.	Student followed agreed-upon rules for discussion. Student was able to listen to others and not interrupt.
Content (x1)	Student did not offer any response to questions asked by the teacher.	Student response showed some understanding of what things create a good learning environment.	Student response showed an adequate understanding of what things create a good learning environment and provided explanations to support ideas.

5. Brochure

The teachers and the principal have asked your design team to make a brochure that can be given to the parents and the school community. A brochure is like a small book with colorful pages. The purpose of this brochure is to share your design plan. In this brochure, you should include a picture of the new space and provide the important details that will be new to the classroom.

- What is a design plan?
- What does a design plan look like?
- What is a brochure?

Brochure-Classroom Architect

Achievement Levels	1	2	3
Content and Relevance (x1)	Brochure has one or fewer pages that include pictures and/or details relating to a new classroom design.	Brochure has a few pages that include pictures and/or or details relating to a new classroom design.	Brochure has more than a few pages that include pictures and/or details relating to a new classroom design.
Printing and Illustrations (x1)	Printing and illustrated content is not neat or organized.	Printing and illustrated content are somewhat neat and organized.	Printing and illustrated content are relatively neat and organized.
Engineering and Creativity (x1)	Student produced brochure demonstrates little knowledge of engineering or creativity and does not include any new ideas.	Student produced brochure demonstrates some knowledge of engineering and creativity by highlighting new ideas.	Student produced brochure demonstrates knowledge of engineering and creativity by highlighting new ideas.

6. Journal Prompt

What have you learned about classrooms and how the design of a classroom can help students learn?

- Why are classrooms important?
- How can a classroom help students learn?
- What does a classroom need to have in it?

Journal Prompt-Classroom Architect

Achievement Levels	1	2	3
Conventions (x1)	Few sight words are spelled correctly and lacks phonetic construction of unknown words. No capitalization or punctuation used	A majority of sight words are spelled correctly. Demonstrates an attempt at phonetic construction of unknown words. Minimal capitalization and/or punctuation are used.	All sight words are spelled correctly. Demonstrates success in phonetic construction of unknown words. Some capitalization and simple punctuation.
Content (x1)	Journal response shows little connection to content discussed.	Journal response shows minimal connection to content discussed.	Journal response shows few connections to content discussed.
Engineering (x1)	Response shows little understanding that research, testing and asking questions is necessary in engineering a new design or plan.	Response shows some understanding that research, testing and asking questions is necessary in engineering a new design or plan.	Response shows understanding that research, testing and asking questions is necessary in engineering a new design or plan.